

LISTING OF THE CLAIMS

This following listing of the claims is provided in accordance with 37 C.F.R.

§1.121:

1. (currently amended): An induction heating system, comprising:
a portable power source electrically coupleable to a fluid-cooled induction heating cable and operable to convert incoming power to controlled frequency output power to produce a varying magnetic field;
a portable, programmable power source controller coupled to the portable power source for regulating the power conversion; and
a portable cooling unit fluidically coupleable to the fluid-cooled induction heating cable to cool the fluid-cooled induction heating cable.
2. (previously presented): The system as recited in claim 1, comprising a flexible fluid-cooled induction heating cable.
3. (previously presented): The system as recited in claim 1, wherein the fluid-cooled induction heating cable is coupled via connector assemblies to the portable power source and portable cooling unit.
4. (original): The system as recited in claim 3, wherein the portable power source controller is operable to control power from the power source to produce a desired temperature profile in the workpiece.
5. (original): The system as recited in claim 2, wherein the induction heating system is operable to preheat a workpiece before welding and to relieve stress from the workpiece after welding.

6. (original): The system as recited in claim 1, comprising a wheeled cart, wherein the power source and cooling unit are disposed on the wheeled cart.

7. (original): The system as recited in claim 6, wherein the power source controller is disposed on the wheeled cart.

8. (original): The system as recited in claim 1, comprising a temperature feedback device operable to provide an electrical signal representative of workpiece temperature.

9.-46. (cancelled)

47. (currently amended): A portable heating system, comprising:
a power source operable to convert incoming power to controlled frequency output power and to apply the output power to heat a workpiece;
a power source controller operable to control the heating of a workpiece in response to programming instructions provided by a user to produce a desired temperature profile in the workpiece; and
a cart operable to transport the power source and power source controller to the workpiece.

48. (original): The system as recited in claim 47, wherein the system is an induction heating system.

49. (original): The system as recited in claim 47, comprising a fluid-cooled induction heating cable.

50. (original): The system as recited in claim 47, comprising a cooling unit operable to provide a flow of cooling fluid, the cooling unit being disposed on the cart.

51. (original): The system as recited in claim, 47, comprising a temperature feedback device operable to produce a signal representative of workpiece temperature to the power source controller.

52. (original): The system as recited in claim 47, wherein the power source controller uses PID control.

53. (original): The system as recited in claim 47, wherein the power source controller uses PI control.

54. (original): The system as recited in claim 47, wherein the system is operable to raise the temperature of a workpiece to a first temperature and lower the temperature of the workpiece from the first temperature to a second temperature at a desired rate.

55. (original): The system as recited in claim 47, comprising an insulation blanket having a visible line to enable the insulation blanket to be aligned with a weld joint.

56. (cancelled)

57. (currently amended): An induction heating system, comprising:
a portable power source electrically coupleable to a portable fluid-cooled induction heating cable and operable to convert incoming power to controlled frequency output power to produce a varying magnetic field;
a portable programmable controller operable to control induction heating; and

a portable cooling unit fluidically connected to the portable fluid-cooled induction heating cable to cool the fluid-cooled induction heating cable.

58. (previously presented): The system as recited in claim 57, wherein the portable programmable controller comprises a plurality of visual indicators.

59. (previously presented): The system as recited in claim 57, wherein the fluid-cooled induction heating cable is connected via connector assemblies to the portable power source and portable cooling unit.

60. (previously presented): The system as recited in claim 57, wherein the portable programmable controller is operable to control induction heating to produce a desired temperature profile in a workpiece.

61. (previously presented): The system as recited in claim 57, wherein the induction heating system is operable to preheat a workpiece before welding and to relieve stress from the workpiece after welding.

62. (previously presented): The system as recited in claim 57, comprising a wheeled cart, wherein the power source and cooling unit are disposed on the wheeled cart.

63. (previously presented): The system as recited in claim 62, wherein a portable programmable controller is disposed on the wheeled cart.

64. (previously presented): The system as recited in claim 57, comprising a temperature feedback device operable to provide an electrical signal representative of a workpiece temperature.

65. (previously presented): The system, as recited in claim 64, wherein the electrical signal representative of the workpiece temperature from the temperature feedback device is sent to the programmable controller.

66. (previously presented): The system as recited in claim 57, wherein the programmable controller uses proportional-integral-derivative (PID) control.

67. (previously presented): The system as recited in claim 57, wherein the programmable controller uses proportional-integral (PI) control.

68. (currently amended): A portable induction heating system, comprising:
a power source operable and operable to convert incoming power to controlled frequency output power and to apply power the output to inductively heat a workpiece;
a temperature controller operable to control the induction heating of the workpiece in response to programming instructions provided by a user to produce a desired temperature profile in the workpiece; and
a cart operable to transport the power source and temperature controller to the workpiece.

69. (previously presented): The system as recited in claim 68, wherein the temperature profile is configured for post-weld stress relief of the workpiece.

70. (previously presented): The system as recited in claim 68, comprising a fluid-cooled induction heating cable.

71. (previously presented): The system as recited in claim 68, comprising a cooling unit operable to provide a flow of cooling fluid, the cooling unit being disposed on the cart.

72. (previously presented): The system as recited in claim, 68 comprising a temperature feedback device operable to produce a signal representative of workpiece temperature to the temperature controller.

73. (previously presented): The system as recited in claim 68, wherein the temperature controller uses proportional-integral-derivative (PID) control.

74. (previously presented): The system as recited in claim 68, wherein the temperature controller uses proportional-integral (PI) control.

75. (previously presented): The system as recited in claim 68, wherein the system is operable to raise the temperature of a workpiece to a first temperature and lower the temperature of the workpiece from the first temperature to a second temperature at a desired rate.

76. (previously presented): The system as recited in claim 68, comprising an insulation blanket having a visible line to enable the insulation blanket to be aligned with a weld joint.

77. (previously presented): The system as recited in claim 70, wherein the fluid-cooled induction heating cable is connected via connector assemblies to the portable power source.

78. (previously presented): The system as recited in claim 71, wherein a fluid-cooled induction heating cable is connected via connector assemblies to the portable cooling unit.

79. (currently amended): An induction heating system, comprising:

a portable power source electrically coupleable to a fluid-cooled induction heating cable and operable to convert incoming power to controlled frequency output power to produce a varying magnetic field;

a portable programmable power source controller coupled to the portable power source for regulating the power conversion; and

a portable cooling unit fluidically connected to the fluid-cooled induction heating cable to cool the fluid-cooled induction heating cable.

80. (previously presented): The system as recited in claim 79, comprising a flexible fluid-cooled induction heating cable.

81. (previously presented): The system as recited in claim 79, wherein the fluid-cooled induction heating cable is coupled via connector assemblies to the portable power source and portable cooling unit.

82. (previously presented): The system as recited in claim 79, wherein the portable programmable power source controller is operable to control power from the power source to produce a desired temperature profile in the workpiece.

83. (previously presented): The system as recited in claim 79, wherein the induction heating system is operable to preheat a workpiece before welding and relieve stress from the workpiece after welding.

84. (previously presented): The system as recited in claim 79, comprising a wheeled cart, wherein the power source and cooling unit are disposed on the wheeled cart.

85. (previously presented): The system as recited in claim 79, wherein a portable power source controller is disposed on the wheeled cart.

86. (previously presented): The system as recited in claim 79, comprising a temperature feedback device operable to provide an electrical signal representative of workpiece temperature.

87. (previously presented): A portable heating system, comprising:
a power source operable to convert incoming power to controlled frequency output power and to apply power to heat a workpiece;
a controller operable to control the heating of the workpiece in response to programming instructions for producing a desired temperature profile in the workpiece;
and
a cart operable to transport the power source and controller to the workpiece.

88. (previously presented): The system as recited in claim 87, wherein the system is an induction heating system.

89. (previously presented): The system as recited in claim 87, comprising a fluid-cooled induction heating cable.

90. (previously presented): The system as recited in claim 87, comprising a cooling unit operable to provide a flow of cooling fluid, the cooling unit being disposed on the cart.

91. (previously presented): The system as recited in claim 87, comprising a temperature feedback device operable to produce a signal representative of workpiece temperature to the controller.

92. (previously presented): The system as recited in claim 87, wherein the controller uses proportional-integral-derivative (PID): control.

93. (previously presented): The system as recited in claim 87, wherein the controller uses proportional-integral (PI): control.

94. (previously presented): The system as recited in claim 87, wherein the controller is operable to raise the temperature of a workpiece to a first temperature and lower the temperature of the workpiece from the first temperature to a second temperature at a desired rate.